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Modified phosphocalcic compound and injectable

This is application is a 371 of PCT/FR03/00527 filed on 02/18/2003.

composition containing it

The invention relates to a phosphocalcic compound modified with a gem-biphosphonic compound, to a process for preparing it and to its use for producing an injectable composition.

5 Deregulation of the bone activity of an individual is the cause of many bone pathologies such as osteoporosis, Paget's disease or osteolytic tumors. Taking into account, in particular, the increase in human life expectancy, osteoporosis has become a public health
10 problem and much research has been undertaken to remedy it. Since the bone pathologies under consideration are caused by an imbalance in bone remodeling to the benefit of the activity of the osteoclasts, one of the routes of treatment envisioned consisted in reducing
15 the activity of the osteoclasts, in order to slow down the degradation of the bone material.

 Studies performed on various gem-biphosphonic acids have shown their inhibitory power on osteoclast activity (G.A. Rodan et al., Therapeutic Approaches to
20 Bone Diseases, 1 September 2000, Vol. 289, Science, pp. 1508-1514). The use of some of them as medicaments, especially etidronate, clodronate, pamidronate, alendronate, risedronate, tiludronate and ibandronate, has been accepted in various countries. Data have been
25 published for other gem-biphosphonic acid compounds, especially zoledronate, incadronate, olpadronate and neridronate. The gem-biphosphonic acids that are used at the present time for the treatment of bone lesions are used systemically and, as a result, give rise to a
30 few undesirable side effects. They can cause renal disorders when they are administered intravenously, and digestive system disorders, especially esophagitis or stomach ulcers, when they are administered orally [(Lin